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Fibonacci Numbers Flash Project

At the beginning of the quarter when I began the design for my lesson Fibonacci

numbers, I knew nothing about Flash. Now, I know enough to know that there is a lot more I

need to learn!

Project Design I designed the Fibonacci numbers lesson as a self-paced, linear, online

project with a target audience of 4th and 5th graders. I chose the design because the content

that I wanted to cover was linear in nature. In other words, learners needed to understand

what Fibonacci numbers were and how to calculate the Fibonacci series before learning about

Golden ratios and Golden spirals. In addition, some basic vocabulary/terminology (like ratio)

and mathematical facts (like what three dots after a number means) were necessary pre-

requisites for understanding some of the content.

Process I very much enjoyed the process of doing a task analysis, followed by a flow

chart, followed by a storyboard. At work, I have never had (or taken?) the time to do all of

those steps on a project, and I enjoyed the reflection time and ability to fine tune the project

that the full process allowed.

Design Changes Unfortunately, due to my limitations in Flash, I abandoned several elements of the project that I consider key to having strong learning design, mostly hands-on practice. I wanted learners to be able to independently calculate the Fibonacci series as a knowledge check. Instead, I asked a multiple choice question about the rule. Likewise, I wanted learners to be able to build their own golden rectangle, using some sort of function to calculate a line that was exactly 1.618 times the length of another line, and then having learners click and drag the lines to build the rectangle. I am disappointed in myself for not picking up Flash quickly enough to make these, and other, elements happen as originally designed.

Instructional Design As I reflect on my project, the part I am happiest with is the overall instructional design. I believe I had well-defined, do-able, and appropriate objectives for my 4th/5th grade learners, and that my project successfully addressed those objectives. I think the organization and flow of the content is clear and logical. The script, for the most part, uses appropriate language and strikes a reasonable balance between too much and not enough explanation. On the other hand, I skimped on the assessment questions because I ran out of time. And, as noted earlier, I did not have enough practice overall for the learners, and abandoned key hands-on practice opportunities because of my lack of skill with Flash.

Animations The opening animation, with a mixture of numbers and graphics, fit my goal of having an attention-grabbing opening that I believe conveyed the main message of the training: that math is interesting and everywhere in the world. The animations I used when calculating both the Fibonacci series and the Golden series, worked fairly well. Given time, I would have

played around more with the animation to make the numbers actually move from the calculation box to the space below, rather than just having them appear below.

Narration   I have mixed feelings about the audio narration. On the one hand, I believe it supports the learning goals of the lesson as well as my personal goal of learning more about how to do projects that I currently do in PowerPoint or Captivate in Flash. The narration also let me create a learning module that is more visually and graphically oriented, instead of being heavily text-based. But on the other hand, the quality of the audio doesn't thrill me. Before handing this project off to students, I would need to do more audio editing work to reduce pops and hisses. Also, I should have optional captions or a printable script for any learners with hearing, language or audio-processing challenges.

Assessment   The Learning Interactions provided in Flash made it easy to write the quiz questions, and I like the feedback and navigation options provided. Given time, I would alter the quiz questions to make their format more consistent with the rest of the project.

"Look" and Usability The colors I used in the project pretty well, although one person in class said he had a hard time reading the text on the background. I had hoped to design a more interesting background, but abandoned that idea as time was running out. I consistently used the same fonts and colors, as well as the same type of graphic (mostly photos). The occasional stops in the timeline with learners prompted to click on the "Next button" were not in my original project design. I added them to make it easier to sync up audio with actions. I'm not sure whether or not this is a plus, a minus, or neither from a learner perspective.

Suggestions from Classmates   Since my project was not in final form during Thursday's class, it made it harder for my classmates to provide feedback. They correctly noted the navigation and audio synch problems I was encountering, which, for the most part, I managed to fix in the final version. One student noted that a backwards navigation option would have been nice, and I agree.

Positive Feedback from Classmates   I got positive feedback on the opening animation, the appropriate use of graphics and animation throughout, the audio narration, and the overall look and flow.

If I Could Do It All Over Again…   If I could start this project all over again, I would make sure I understood some basic Flash concepts about using the timeline differently. I would create a movie clip to hold a series of animations and audio, and then place all the movie clips sequentially on the main project timeline. The way that I created this project, the overall project timeline became unwieldy to navigate and manage. This also contributed to the time-consuming nature of my efforts to synch audio narration with the animations.

Likewise, I would spend more time learning ActionScript. I mistakenly thought I would be able to do most of what I wanted in this project design without delving into ActionScript, and that clearly was wrong.

I might consider using menus and a more web-based look and feel for the project (like those of my classmates). Their projects looked so clean and consistent and easy to navigate, and I wish I could have achieved that as well. However, since my project really needed to be linear, I'm not

sure a menu-based navigation system would be the best choice since that would allow learners to work through sections of content out of order.

And finally, if I needed to start this project all over again, I would seriously consider hiring someone to do the Flash development work for me. I learned a lot about Flash during this project, which was great. But I wouldn't want to repeat this very time-consuming experience.